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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods
(Thirteenth session, Geneva, 7-17 July 1997, agenda item (3 (b))

DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Use of packagings and IBCs

Packaging for safety matches

Transmitted by the Observer of South Africa

A new packaging has been developed for Matches, Safety, UN 1944, Class 4.1, Packing Group III.

There are two main packing configurations

a) **half packs** - maximum gross mass 9 kg. Made up of 100 packets of 10 x solid fibreboard boxes of matches. Each packet is wrapped in 52 g/m^2 machine-glazed paper manufactured from recycled material.

b) **full packs** - maximum gross mass 17 kg. Made up of

1) 200 packets of 10 x solid fibreboard boxes of matches. Each packet is wrapped in 52 g/m^2 machine-glazed paper manufactured from recycled material, or

2) 20 shrink-wrapped packs of 10 packets. Each packet contains 10 x solid fibreboard boxes of matches. The shrinkwrap film is 25 micron polypropylene and the pack is overwrapped in 52 g/m^2 machine-glazed paper manufactured from recycled material.

The construction of the outer packaging consists of a multi-walled paper sack incorporating two layers of 140 g/m^2 Kraft brown paper with the inner layer waterproof lined on the innermost side with a polyethylene coating. After filling, the open end is sealed with cold PVA adhesive. The style pack is a bale pack.

The South African Bureau of Standards, as the approved testing authority for the South African Department of Transport, performed the drop test and stacking test in accordance with the test methods given in the UN Recommendations on the packing configurations. Both these two packagings passed the tests (see annexes I and II for the test results).

PROPOSAL

We propose that the packaging be accepted for road, rail and sea transport of Matches, Safety; UN 1944, to a maximum gross mass of 20 kg.

South African Bureau of Standards
1 Dr Lategan Road, Groenkloof

Private Bag X191
PRETORIA 0001
Republic of South Africa

Your ref: Letter dd 94-09-26

Our ref: 17/22/47

Enquiries T.J. Grobler
☎ 428-6102

The Director
The Lion Match company Ltd
Attention: Mr J.R.G. Sessions
P.O. Box 918
Durban
4000

TEST REPORT

No. 691/83443/L400

Date 1994-11-25

This report relates only to the specific sample(s) tested as identified herein. It does not imply SABS approval of the quality and/or performance of item(s) in question and the test results do not apply to any similar item that has not been tested. (Refer also to the complete conditions printed on the back of the official test reports.)

1. DESCRIPTION OF PACKAGING DESIGN TYPE TESTED

See specification form attached as Appendix A.

Sample Numbers and Masses

Sample No.	Mass filled (kg)	Mass empty (kg)
1 2 3 4 5 6 7 8	8,7	-

Contents: Inner packagings, detailed in Appendix A, filled with matches

2. TESTS PERFORMED AND RESULTS

Test method: drop and stacking tests to paragraphs 9.7.3 and 9.7.6 of the Recommendations prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods, as revised December 1990.

The methods of sample preparation and testing are detailed in the Operational Instructions for Test Stations, Appendices

Drop Test Results (paragraph 9.7.3)

Sample No.	Drop Ht(m)	Drop Attitude	Results
1	0,8	Flat on base	Pass
1	0,8	Flat on top	Pass
1	0,8	Flat on long side	Pass
1	0,8	Flat on short side	Pass
1	0,8	Diagonally on one corner	Pass

Annex I

Stacking Test Results (paragraph 9.7.6)

Sample numbers	: 1
Required load	: 8,7 kg per sample, equivalent to a 3m stack
Applied load	: 113 kg
Contents	: Actual commodity
Conditions	: 23 ± 2°C, 50 ± 2% r.h.
Results	: Pass

3. CONCLUSIONS

Samples of the packaging design type were tested in accordance with paragraphs 9.7.3 and 9.7.6 of the Recommendations prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods, as revised December 1990.

They were tested for Group III, gross mass not exceeding 9 kg.

The samples passed the tests and the packaging design type is considered to meet the performance requirements.

NOTE:
This design type will only be allowed for National distribution and is subject to the approval of the regulatory authorities.

TJ Grobler
PACKAGING DIVISION
for PRESIDENT

This report relates only to the samples tested and is issued subject to the conditions printed on the back of Page 1. It does not imply approval by the South African Bureau of Standards of the quality and/or performance of the commodity that has been tested. It does not authorize the use of the Standardization Mark.

Hierdie verslag is van toepassing slegs op die getoetste monsters en word uitgereik behoudens die voorwaardes op die keersy van bladsy 1 gedruk. Dit beteken nie dat die Suid-Afrikaanse Buro vir Standaarde die kwaliteit en/of werkverrigting van die getoetste artikel goedgekeur nie. Dit verleen ook nie die reg om die Standaardmerk te gebruik nie.

SOUTH AFRICAN BUREAU OF STANDARDS

SABS SPP12 5/92

PERFORMANCE TESTS OF PACKAGINGS FOR DANGEROUS GOODS

SPECIFICATION OF PACKAGING

PAPER BAGS (BALE PACK)

Appendix A L400

UN Code 5M1

Manufacturers Name & Address						
Style	Open mouth: Yes	Gusseted: N/A	Pasted/Seam: Yes			
	Valved: N/A	Non-gusseted: Yes				
Dimensions in millimetres	Length + A	Face width + B	Gusset o C	Bottom width + D	Valve width + E	
Nominal						
Actual including finish	565	410	-	-	-	

	Ply 1 (outer)	Ply 2	Ply 3	Ply 4	Ply 5	Ply 6	Liner
Type of material	K	PLC					
Grammage (g/m^2)	140	140					
Coating mass (g/m^2)	-	-					

Valve	N/A	
Closure	Base: Cold PVA adhesive (Rectangular closing method)	
	Top: Cold PVA adhesive (Rectangular closing method)	
Sewing	Type of stitch	Stitches per 100 mm
	Type of thread N/A	Min. breaking load (Newtons) N/A
	Filter cord	
Adhesive	Cold PVA adhesive	
Remarks	100 x paper wrapped unit packs of 10 x solid fibreboard boxes of matches, each unit pad wrapped in 52 per g/m^2 machine glazed paper of 100% recycled fibre. Packing pattern: 4 layers of 5 x 5 unit packs.	

ABBREVIATIONS

+	Flat unopened condition	Natural Kraft	K
o	Open width	Extensible Kraft	EK
		Low stretch Crepe Kraft	LSCK
		Wet strength Qualities	Prefixed WS
		Bitumen Laminates	Prefixed BU
		Polyethene Coatings	Prefixed PLC

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TEST REPORT

No. 691/83443/L401

Date 1994-11-25

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1. DESCRIPTION OF PACKAGING DESIGN TYPE TESTED

See specification form attached as Appendix A.

Sample Numbers and Masses

Sample No.	Mass filled (kg)	Mass empty (kg)
1 2 3 4 5 6 7 8	17	-

Contents: Inner packagings, detailed in Appendix A, filled with matches

2. TESTS PERFORMED AND RESULTS

Test method: drop and stacking tests to paragraphs 9.7.3 and 9.7.6 of the Recommendations prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods, as revised December 1990.

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Sample No.	Drop Ht(m)	Drop Attitude	Results
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1	0,8	Flat on long side	Pass
1	0,8	Flat on short side	Pass
1	0,8	Diagonally on one corner	Pass

South African Bureau of Standards **Suid-Afrikaanse Buro vir Standaarde**

REPORT No. 691/83443/L401
VERSLAG

Stacking Test Results (paragraph 9.7.6)

Sample numbers	: 1
Required load	: 17 kg per sample, equivalent to a 3m stack
Applied load	: 221 kg
Contents	: Actual commodity
Conditions	: 23 ± 2°C, 50 ± 2% r.h.
Results	: Pass

3. CONCLUSIONS

Samples of the packaging design type were tested in accordance with paragraphs 9.7.3 and 9.7.6 of the Recommendations prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods, as revised December 1990.

They were tested for Group III, gross mass not exceeding 17 kg.

The samples passed the tests and the packaging design type is considered to meet the performance requirements.

NOTE:
This design type will only be allowed for National distribution and is subject to the approval of the regulatory authorities.

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UN Code 5M1

Appendix A L401

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Style	Open mouth: Yes Gusseted: N/A Pasted/Seam: Yes Valved: N/A Non-gusseted: Yes

Dimensions in millimetres	Length + A	Face width + B	Gusset o C	Bottom width + D	Valve width + E
Nominal					
Actual including finish	945	410	-	-	-

	Ply 1 (outer)	Ply 2	Ply 3	Ply 4	Ply 5	Ply 6	Liner
Type of material	K	PLC					
Grammage (g/m²)	140	140					
Coating mass (g/m²)	-	-					

Valve	N/A
Closure	Base: Cold PVA adhesive (Rectangular closing method) Top: Cold PVA adhesive (Rectangular closing method)
Sewing	Type of stitch Stitches per 100 mm Type of thread N/A Min. breaking load (Newtons) N/A Filter cord
Adhesive	Cold PVA adhesive
Remarks	200 x paper wrapped unit packs of 10 x solid fibreboard boxes of matches, each unit pad wrapped in 52 per g/m² machine glazed paper of 100% recycled fibre. Packing pattern: 4 layers of 10 x 5 unit packs.

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